

# How to insert and remove an IUD

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**Removal of an IUD is a very simple procedure and can be performed by any doctor who has the facilities to perform a speculum examination. Insertion of an IUD is a little more complicated but readily within the skills of most primary care physicians.**

Although the first modern intrauterine device (IUD), the Grafenberg Ring, was trialled in 1909, the concept of intrauterine contraception is an ancient one. Arab camel traders reportedly introduced stones into their female camel's uterus to prevent pregnancy during long journeys.

IUDs are presently used by 4.5% of Australian women and remain a very effective and valuable choice provided the patient has been well selected (see the box on this page) and counselled adequately regarding the pros and cons of this method.

IUD removal and insertion in Australia do not generally require the practitioner to hold procedural insurance; however, it would be advisable to check this with one's insurer.

## Types of IUD

There are three types of IUD presently available in Australia: two copper bearing IUDs (the Copper-T380A and the Multi-load-Cu375) and the more expensive, progestogen bearing IUD (Mirena).

The copper bearing IUDs have two main methods of action. The copper is toxic to sperm, killing them before they transit the uterine cavity. In addition, the presence of the IUD within the uterus sets up a sterile inflammatory reaction, making conditions unsuitable for implantation of any fertilised ovum. An unfortunate side effect of this inflammatory

reaction is that periods in women wearing a copper bearing IUD may be longer, heavier and more painful than prior to its insertion.

The progestogen bearing IUD works differently. The sleeve around the plastic backbone secretes a progestogen, making cervical mucus thick and impenetrable to sperm. The progestogen also makes the uterine lining thin and unsuitable for implantation. With progestogen bearing IUDs, periods tend to become lighter or absent after a few months' use, but initial irregular bleeding is not uncommon.

## IUD insertion

While all IUDs are inserted using similar principles, the exact insertion procedures vary from device to device. The Multiload

device uses a push technique, whereas the Cu-T380A and Mirena use a pull-back technique in which the inserting tube around the IUD is removed once the device is correctly in place. It is important to be familiar with the manufacturer's instructions and preferable to have practised the technique with a nonsterile device prior to one's first 'live' insertion.

## Preinsertion check

Ensure that the patient's history has been adequately recorded and briefly review relative contraindications. Any history of irregular menstrual bleeding should be investigated before insertion of an IUD. It is important to clarify any concerns or questions the patient may have.

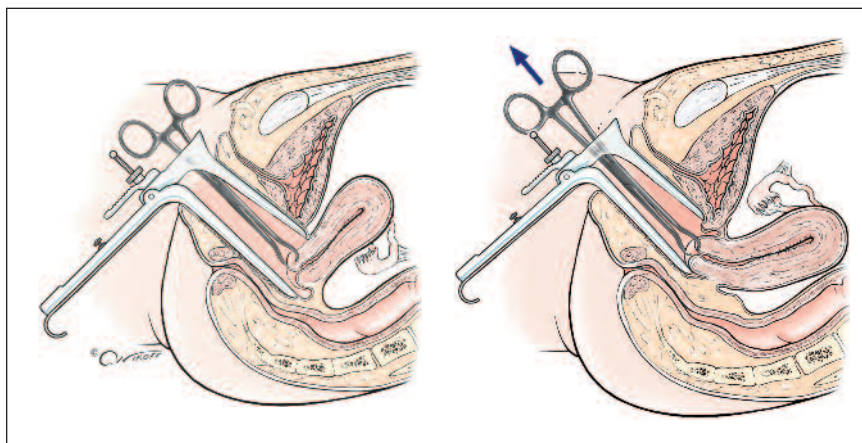
Obtain and witness a short, signed consent to a minor surgical procedure. It should cover the major known side effects of the IUD (including the risk of contraceptive failure, increased menstrual pain and bleeding, and risk of pelvic infection).

Check that there is no possibility of a pre-existing pregnancy. An IUD can be safely inserted up to day 17 from the last normal menstrual period of a 28-day cycle or longer. Shorter cycles reduce this interval (for example, a woman with a 24-day cycle could safely have an IUD

## Who is suitable for an IUD?

- Women requiring effective, convenient contraception. The failure rate is less than 2% with copper IUDs and less than 1% with progestogen IUDs.
- Women requiring long term contraception.
- Women whose periods are not particularly heavy or painful as IUDs tend to exacerbate these symptoms. Progestogen bearing IUDs are an exception and can be used to treat heavy painful menses.
- Women who have had children. IUD insertion is technically more difficult in nulliparous women and the implications of IUD related complications are perhaps more significant.
- Women at low risk of sexually transmitted infections. This is usually defined as those in stable, long standing, mutually monogamous relationships, although even this definition offers no guarantees.
- Women who do not mind that the insertion and removal of an IUD involve minor surgical procedures.

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Figures 1a and b. Applying traction. a (left). Apply the tenaculum to the anterior lip of the cervix at 12 o'clock. b (right). Gentle traction should be applied to reduce uterine flexion.

inserted only up to day 13).

Offer the patient two Naprogesic tablets (or equivalent), unless she has already taken analgesia, to reduce postinsertion discomfort.

Immediately before the insertion procedure perform a pelvic examination to establish the position and degree of flexion of the uterus. This determines how the uterine sound is used to measure the length of the uterus.

### Equipment

All instruments should be prepared in a

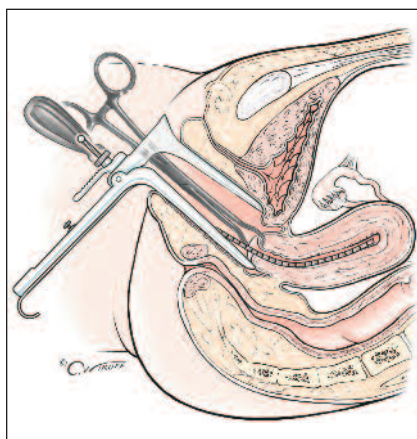


Figure 2. Sounding the uterus. The sound is marked in centimetres and measures the length from the cervical os to the fundus of the uterus.

sterile autoclaved pack. The pack should contain:

- a small or medium speculum
- two small pots for antiseptic solution
- cotton balls or swabs
- sponge-holding forceps
- a single-toothed tenaculum
- long-handled scissors
- long-handled artery forceps
- a uterine sound in a separate sterile pack (unpack at the last minute to reduce the possibility of contamination).

You will also need:

- 1% plain lignocaine in a 10 mL syringe with 23 G needle
- antiseptic solution such as Hibitane
- obstetric cream (optional) – may ease the sound through the os and give a clearer view of the uterine length
- sterile gloves
- a resuscitation pack – including atropine.

### Procedure

Put on sterile gloves and use a strict no-touch technique at all times. Place used instruments separately on the tray from those yet to be used.

Insert the speculum so that there is adequate visualisation and good access to the cervix. Swab the vagina and cervix with antiseptic solution.

Apply local anaesthetic to the anterior lip of the cervix at about the 12 o'clock position. This is not compulsory, but it makes the subsequent application of the single-toothed tenaculum more comfortable and may help the cervical os to relax. Warn the patient that this procedure stings a little – a useful tip is to place the local anaesthetic close to the cervix and then ask the patient to cough. Inject 2 to 3 mL of 1% lignocaine, but retain the syringe in case further anaesthetic is required. Apply gentle traction to the tenaculum to reduce uterine flexion (Figure 1).

Gently sound the uterus (Figure 2). The direction the sound is introduced depends on whether the uterus is anteverted or retroverted. It is important never to force the sound. Sustained gentle pressure on the internal os usually causes it to relax. When the uterine sound meets resistance at the fundus, withdraw it slowly and note the length of the uterus from the cervical os to fundus. Incorrect sounding may result in perforation of the uterus by the sound or IUD. Alternatively, low placement of the device may result in decreased effectiveness and increased discomfort. A normal uterus should sound between 6 and 9 cm.

At this point, remove the IUD from its packaging while maintaining the no-touch technique.

After the guard on the inserter is set to the depth indicated on the sound, the Cu-T380A needs its arms loaded into the inserter tube. Although a plastic sleeve is provided, the loading is often more easily achieved by donning another pair of sterile gloves and manipulating the arms. It is important that the arms are not loaded too early because they may lose their ability to spring back into their correct position.

In the Multiload-Cu375 the guard on the inserter tube is simply set at the depth of the sound and the device is inserted, ensuring that its arms are maintained in a horizontal position as they go through

the cervical os. The Mirena has a special two-position sliding system on its inserter tube to ensure correct placement.

Gently insert the IUD into the uterus according to the manufacturer's instructions and remove the insertion tube.

Trim the strings to 2 to 3 cm and record their length. (If the strings are too long or short they may irritate the patient's partner during intercourse.) After removing the speculum, offer the patient a sanitary pad and ask her to remain resting for three to five minutes.

The patient's notes should include all examination findings as well as the length of uterine sounding, IUD type and batch number, and length of strings visible at the os.

### Troubleshooting

- **External os is tight.** Many of these women are suitable for an IUD, but they may require sedation or cervical dilatation. The procedure is usually more painful and only the most experienced practitioners should attempt it in an outpatient setting.

- **History of rheumatic heart disease.** Some practitioners decline to insert an IUD in women with a significant murmur. If an IUD is used, prophylactic antibiotic cover is required before insertion.

- **Uterus sounds less than 6 cm.** Try gently increasing the traction to reduce flexion and facilitate sounding. If unsuccessful, try inserting the sound aiming towards the back rather than the front, as the uterus may be retroflexed. If the uterus still sounds at less than 6 cm, the patient is not suitable for an IUD and may well have some underlying abnormality, such as a bicornuate uterus or fibroids. Even patients who sound between 6.0 and 6.5 cm have a slightly higher rate of pain, expulsion and bleeding after IUD insertion.

- **Uterus sounds more than 9 cm.** The patient is unsuitable for an IUD because it does not provide adequate cover for the entire endometrium, and therefore there is a higher risk of pregnancy.

- **Vasovagal reaction.** This is due to cervical excitation. The patient feels faint or nauseated, or (rarely) loses consciousness. If the IUD is not yet in place, stop the insertion. Do not remove it if it is already in place, as this usually makes things worse. Often the patient will respond to simple reassurance and elevation of the lower limbs. If not, intravenous atropine, 0.6 to 1.2 mg, is recommended. In nervous patients, consider inserting a small butterfly needle before the procedure, as veins may be difficult to find in a patient who has fainted. When a patient is extremely nervous it may be appropriate to suggest that the IUD be inserted under sedation.

- **Unsuspected cervicitis.** Occasionally, cervicitis is noted at examination prior to IUD insertion. Obtain appropriate swabs and defer IUD insertion until after treatment. Recheck aspects of the patient's history – particularly the risk of sexually transmitted infections.

The presence of clinical vaginitis need not delay insertion, unless the woman experiences undue discomfort during the procedure. Monilial vaginitis should simply be treated following the insertion of the IUD. If bacterial vaginitis is diagnosed, there is again no need to delay insertion. However, it is particularly important to treat the patient with 2 g stat of either metronidazole (Flagyl, Metrogyl, Metronide) or tinidazole (Fasigyn, Simplotan) following insertion, because bacterial vaginitis is associated with pelvic inflammatory disease secondary to instrumentation.

### Follow up

For two days after the IUD insertion, the woman should shower rather than bathe and avoid sex, swimming and tampon use. This reduces the risk of pelvic infection occurring due to the disrupted cervical mucous barrier.

The patient should be taught to feel for her IUD strings after these two days and advised to check after each period that the IUD is still in its correct position

using the presence and length of the strings as her guide. The most likely time for a pelvic infection to occur is within the first three weeks following IUD insertion. She should be informed of the symptoms of pelvic inflammatory disease and asked to return promptly to the doctor should she have any concerns.

In the absence of unexpectedly severe pain or heavy bleeding, a routine IUD check at six weeks will allow any problems to be addressed quickly. After asking about bleeding patterns and discomfort, the doctor should perform a pelvic and speculum examination.

If there are no further problems, the IUD should simply be checked at routine Pap screening visits.

### IUD removal

If the IUD is being removed because of suspected pelvic infection, it is preferable to start antibiotic cover 36 to 48 hours before removal to prevent septicaemia.

In the case of routine IUD removal, the woman should be warned that if removal is performed during the second half of her cycle there is a theoretical risk of pregnancy if she has been sexually active. The endometrial effect of the IUD will not persist reliably after its

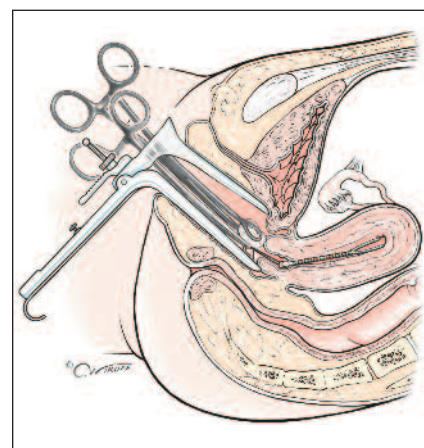


Figure 3. IUD removal. Gentle persistent traction is applied to the strings close to the os, while countertraction is provided using a swab or cotton ball applied to the cervix.

removal. This is not an issue if the patient is having another IUD inserted at the same procedure, in which case the old IUD is simply removed immediately before the new one is inserted. All women having an IUD removed should be informed that there is usually a very rapid return to normal fertility.

Mild cramping is very common as an IUD is removed, but it usually settles quickly. If possible, a patient should be advised to take a simple analgesic one hour before removal to reduce discomfort.

If the IUD has failed and the woman wishes to continue the pregnancy, she should be advised that the risk of miscarriage following removal is 20 to 30%, but that this risk is less than if the IUD remains *in situ*. It is very important to remove the IUD as soon as possible after the pregnancy has been diagnosed because the IUD strings will be drawn up inside the enlarging uterus. Leaving the IUD in the pregnant uterus leads to an increased risk of spontaneous miscarriage and late septic abortion.

### Equipment

The following items should be available:

- a speculum
- long-handled artery forceps
- sponge-holding forceps
- cotton balls or swabs
- a resuscitation pack – including atropine.

### Procedure

Prior to removal of the IUD, perform a pelvic examination to confirm the uterine position. Ensure that the usual resuscitation equipment is at hand in case of a vasovagal reaction.

Insert a speculum so that the cervix and IUD strings are easily seen. Antiseptic solution is not necessary. Local anaesthetic is not routinely required except during a difficult removal.

Use the long forceps to grasp the strings of the IUD as close as possible to the cervical os. Then place a swab or

cotton ball in the sponge-holding forceps and gently apply to the cervix to provide countertraction (Figure 3). This helps the cervix to remain stable and reduces the 'dragging' discomfort sometimes associated with the removal procedure.

Apply firm gentle traction to the forceps holding the strings. It may be necessary to reapply the forceps closer to the os as the strings lengthen. It is this firm, gentle but persistent traction that is the key to successful IUD removal. Any jerking movements may cause the string to break. If the strings are not visible or break, or the IUD does not come down easily, the patient should be referred to a centre experienced in IUD removal with instruments.

After removal, the woman should rest until any uterine cramping has ceased and she feels her normal self again.

### Follow up

No routine follow up is required after IUD removal. However, the patient should be asked to return if she has any unexpected pain or heavy bleeding. **MT**

### Further reading

1. Guillebaud J. Contraception: your questions answered. 3rd ed. Edinburgh: Churchill Livingstone, 1999.
2. FPA Health. Guidelines for clinical practice. Sydney: FPA Health, 2000. (ISBN 0 9577133 8 X)

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